
8.3 CULTURAL RESOURCES

Cultural resources in the general project area include historic and prehistoric archaeological sites, historic buildings and structures, and resources of traditional cultural significance to Native Americans and other groups. This section analyzes the Pico Power Project's (PPP) potential effects to cultural resources within the project Area of Potential Effect (APE). For the purposes of this analysis, the APE is defined as the immediate project site and corridors extending 50 feet to either side of the centerline for linear facilities. Background information is provided for a broader area.

Section 8.3.1 discusses the affected environment, including the natural setting, prehistoric background, ethnographic background, and historic background. Section 8.3.1 also discusses methods and results of archival research and a pedestrian field survey, and discusses the cultural resources documented within the APE. Section 8.3.2 discusses the effects that construction and subsequent operation of the project facilities may have on cultural resources. Section 8.3.3 evaluates any potential cumulative impacts to cultural resources in the project vicinity, and Section 8.3.4 addresses proposed mitigation measures. Section 8.3.5 presents applicable laws, ordinances, regulations, and standards (LORS). Section 8.3.6 presents agency contacts, and Section 8.3.7 presents permit requirements and schedules. Section 8.3.8 contains references.

8.3.1 Affected Environment

Cultural resources are the traces of human occupation and activity that, in west central California, extend back in time for at least 11,500 years. Archaeologists have reconstructed general trends of prehistory. Written historical sources tell the story of the past 200 years.

8.3.1.1 Prehistoric Background

This section discusses general trends in California prehistory. Section 8.3.1.2 discusses the history of archaeological research in west-central California. Section 8.3.1.3 presents the results of archival research and archaeological field surveys conducted for this project.

The general trend throughout California prehistory has been an increase in population density over time, coupled with greater sedentism and the use of a greater diversity of food resources. Chartkoff and Chartkoff (1984) identified three major periods of prehistory observed throughout California: Pre-Archaic, Archaic, and Pacific. These patterns are roughly correlated with the Paleoindian, Archaic, and Emergent periods, developed by Bennyhoff and Fredrickson (1994) for west-central California. As Chartkoff and Chartkoff observe, culture change occurred in different ways and at different times throughout California. These changes nevertheless followed a broad pattern, as outlined below.

Pre-Archaic Period (Prior to 11,000 years before present [BP])

Evidence throughout California and the western United States generally suggests that Pre-Archaic (or Paleoindian) populations were small and their subsistence economies included the capture of big game such as now-extinct large Pleistocene mammals, including mammoth and mastodon. Recent research in the Great Basin, which offers better preservation of Pre-Archaic sites than does California, indicates that the economies of the Pre-Archaic peoples of the far western United States were based on a wide-ranging hunting and gathering strategy, dependent to a large extent on local lake-marsh habitats (Willig 1988).

Large, fluted lanceolate projectile points known as Clovis points, which are the most widely recognized markers for this time period, have been found in the Clear Lake locality at the Borax Lake Site to the

north of the project area (Meighan and Haynes 1970), the Tulare Lake Basin to the south (Wallace and Riddell 1988), and sporadically elsewhere in California. There are no known Pre-Archaic sites from the Bay area.

Early to Middle Archaic Period (11,000–6,000 years BP)

During the Early and Middle Archaic periods, northern California prehistoric cultures, as elsewhere, began to put less emphasis on large game hunting. Subsistence economies probably diversified somewhat, and Archaic-era people may have begun to use certain ecological zones, such as the coast littoral, more intensively than before. Advances in technology, such as the advent of milling stones, indicate that new food processing methods became important during the Archaic, enabling more efficient use of certain plant foods including grains and plants with hard seeds. A model of early Holocene adaptation devised for the eastern Great Basin (Price and Johnston 1988) may be applicable to California. According to this model, this was a period of gradual warming and drying that supported a specialized economy based largely on marsh, lake, and stream resources. It supported higher population densities and a greater degree of sedentism than the Pre-Archaic period.

The earliest Archaic sites from west central California are from the Los Vaqueros Reservoir area in eastern Contra Costa County, where two sites have recently produced artifact assemblages and human burials dated between 9,870 and 6,600 years BP. Prior to the Los Vaqueros excavations, Early to Middle Archaic deposits in the Bay Delta areas were limited to isolated human burials. No sites dating to these periods have been found in the immediate project vicinity. However, the lack of sites from these periods may reflect the alluvial environment as well as the extensive urban development that may have destroyed or covered sites. It is possible that as yet undiscovered Early and/or Middle Archaic sites lie deeply buried or beneath existing paved and landscaped surfaces in the project area.

Late Archaic Period (6,000–4,000 years BP)

One important technological advance during the Late Archaic was the discovery of a process for removing the tannins from acorns, which made it possible to exploit this abundant and nutritious, though labor intensive, resource (Chartkoff and Chartkoff 1984). Prehistoric trade networks also began to diversify and develop during the Late Archaic, bringing raw materials and finished goods from one region to another. Resource exploitation during this period, as well as during the Early and Middle Archaic, was generally seasonal. Bands moved between established locations within a clearly defined and defended territory, scheduling the harvest of particular resources according to the time of their availability. Aggregations of food resources, such as occurred at the shores of a large body of water or along a major fish-producing river, allowed for larger aggregations of people, at least seasonally. Dispersed resources, large and small mammalian game during the winter for example, meant dispersal across the landscape into small family groups for more efficient food harvesting. The spear thrower (atlatl) may have been introduced or increased in importance during this period, accounting for the change in projectile point styles from the Western Stemmed series to the Pinto and Humbolt series, which are generally stemmed or have indented bases, or both. There was also an increase in the importance of seed grinding (Price and Johnston 1988).

It appears that the shell mound sites along San Francisco Bay were first occupied during the Late Archaic. Shell mound sites excavated in the Coyote Hills area contain Late Archaic components. Most of these sites have produced intact human burials and a great variety of artifacts, a reflection of the diverse subsistence practices. Acorns and other nut and berry crops appear to have been the primary plant resources targeted during this period. At sites along the Bay, the abundant remains of marine animals,

including shellfish, fish, and mammals, reflect the occupants' early adaptation to the marine and bayshore estuarine environment. Obsidian from the North Coast Ranges and eastern Sierra also appears at these sites, reflecting the early existence of extensive trade networks.

Early and Middle Pacific Periods (4,000–1,500 years BP)

According to Chartkoff and Chartkoff (1984), the beginning of the Pacific Period is marked by the advent of acorn meal as the most important staple food resource for most California Indians. Increasing population densities throughout the period made it desirable and necessary for California populations to produce more food from available land and to seek more dependable food supplies. The increasing use of food processing techniques, such as seed grinding and acorn leaching, developed during the Archaic, allowed for the exploitation of more dependable food resources. Increasing use of previously neglected ecological zones may also have been part of this trend.

In the Bay area and northern Santa Clara Valley, Early and Middle Pacific sites are typically composed of well-developed midden deposits with human burials and residential features, representing long-term permanent villages. During this period, archaeological evidence indicates an increase in the use of the estuarine and marine zones and fully developed exploitation of these areas. Site assemblages are characterized by a well-developed bone tool and ornament industry; shell beads, ornaments, and pendants; and both unshaped and well-shaped mortars and pestles. Stone tools were manufactured of both locally available chert and imported obsidian. The predominant projectile point type is the shouldered lanceolate form, although side-notched and stemmed points and large lanceolate-shaped bifaces also occur. Burials are typically in a flexed position.

Late and Final Pacific Period (1,500 years BP-Historic Era)

A.D. 500 (1,500 years BP) is a cultural watershed throughout California. Sometime near this date, the bow and arrow replaced the spear thrower and dart as the hunting tool and weapon of choice. The most useful markers for this period tend to be the small projectile points used as arrow tips. The date of bow and arrow introduction is a point of some controversy, but most authors place it between A.D. 500, and 600. Others believe bows and arrows were introduced as early as A.D. 250 (750 years BP; Hughes 1986) or as late as A.D. 700 (1,300 years BP; Bennyhoff et al. 1982).

During the Final Pacific Period, populations became increasingly sedentary and dependent on stored staple foods. Staple foods were stored for the winter in permanent settlements with populations as high as 1,000 persons. At the same time, there is evidence of continued diversification of the resource base. By the Final Pacific Period, every available ecological niche was exploited, at least on a seasonal basis. There was full exploitation of the marine/estuarine zone and further development of long distance trade networks and more complex social and political systems.

Late and Final Pacific period sites are generally well-developed midden deposits, some with surface components. The midden deposits contain both cremated and intact human burials and residential features, including house floors, reflecting the increasingly sedentary populations. Bedrock mortar milling stations were first established in the Bay area and northern Santa Clara Valley around 1,300 years ago. Although portable mortars and pestles continued to be used, smaller specimens were preferred. Changes in the size of ground stone tools reflect the dramatic increase in the use of small-seeded plant resources. Olivella and clamshell disc beads, frequently found in burials, appear to have been manufactured at Bay Area sites. Small unmodified obsidian pebbles and large flake blanks were imported almost exclusively from the Napa Valley. There is evidence that, during this period, inhabitants of the Bay area had well-established trade relations with the Yurok, the Maidu, the Miwok, and several other

interior groups. This period has its end in the late 18th century with the arrival of Euroamericans in the project area.

8.3.1.2 Archaeology and Archaeological Sensitivity of the Project Area

Prehistorically, the south San Francisco Bay region and inland areas near rivers, marshlands and sloughs, such as the Guadalupe River, sustained relatively high prehistoric population densities because these areas afforded a high density of reliable terrestrial food resources, supplemented by aquatic resources from the bay, rivers, creeks, and sloughs. The Guadalupe River is a primary drainage for the area and runs into the San Francisco Bay via Alviso Slough. Prehistorically and historically, the Guadalupe River was a meandering stream that created a topographically diverse environment within its floodplain. Small basins and other slight topographic depressions played a key role in the ecology and prehistoric subsistence and settlement patterns in the area (Basin Research Associates, Inc. 1998, 1999). The project area and vicinity were characterized by salt marshes, estuaries and sloughs, and rivers and streams along the bay-shore and inland, with the valley extending upland to a woodland and grassland zone. The inland-valley floor, especially along river terraces and marshlands, is a high sensitivity area for archaeological sites, and the project area lies within this zone. Prehistoric residential locations in this area allowed easy access to upland, riverine, and seasonal wetland food resources.

In the Bay area and northern Santa Clara Valley, including the project area, occupation was intermittent and sparse prior to around 5,000 to 7,000 years ago. In addition, evidence for occupation prior to 7,000 years ago was hidden by rising sea levels or buried under sediments caused by natural and man-made Bay marshland infilling along estuary margins.

The first formal archaeological study in the San Francisco Bay area was conducted by Max Uhle, who, in 1902, excavated a trench into a shell mound site on the eastern shore of the Bay at Emeryville (CA-Ala-309). At that time, it was assumed that prehistoric California Indian culture had been primitive and unchanging. Although Uhle found stratigraphic differences in mortuary patterns and artifactual assemblages, other scholars largely ignored the evidence of social complexity and maintained the assumption that no meaningful changes took place during California's prehistory (Uhle 1907, Kroeber 1925).

Nels Nelson was the first person to carry out formal archaeological research in the Bay area. He surveyed the prehistoric shell mounds of the Bay area and identified more than 400 mounds around the Bay. Some of the largest Nelson sites included Uhle's Emeryville mound (1,000 by 300 feet and 32 feet deep), the Stege mounds (240 by 160 feet and 350 by 250 feet), and the Ellis Landing mound (460 by 245 feet and more than 30 feet deep). Unfortunately, Nelson did not formally record or accurately map these sites and their approximate locations have been inferred from site remnants, topographic indications, and other lines of evidence.

Within the PPP project area vicinity, Nelson recorded three prehistoric mounds along the west banks of the Guadalupe River between Alviso and San Jose. The closest (approximately 0.4 miles east of the proposed natural gas line) of these mounds is site CA-SCL-6 (west, Mound 340) which was recorded by L.L. Loud as an occupation site, referenced from Nelson's map (Loud 1912; Nelson 1909, ca. 1910). In 1989, the construction of Lick Mill Boulevard, approximately 0.4 miles from the PPP site, resulted in the discovery and removal of 140 Native American burials from CA-SCL-6. In addition, excavation of this site resulted in the identification of a number of features and house remnants, and numerous artifacts including ground stone, shell beads, *Hailiotis* (abalone) ornaments, bone tools, and faunal remains representing various birds, fish, and mammals. Cartier et al. (1993a,b) assigns this site to the Terminal

Phase of the Middle Period through Phase I of the Late Period (880±90 BP to 1520±60 BP), based on radiocarbon dates, obsidian hydration, and diagnostic artifacts (Basin Research Associates, Inc. 1998).

Nelson and other early researchers in the Bay area believed that there were no important breaks in the cultural record of the Bay area and no important cultural changes during the area's prehistory. Although Nelson found differences in shellfish species between upper and lower portions of the Ellis Landing mound, which he excavated, he attributed these differences to environmental causes (changes in the environment led to changes in the abundance of different shellfish species). More recent research in the project area and archaeological excavations, largely conducted to mitigate the impacts of various construction projects, disproved the theory that prehistoric culture was static in the project area. Instead, we know that a series of prehistoric cultural developments occurred, as outlined above. The PPP project site and natural gas and water discharge pipeline routes are within a high sensitivity zone for buried archaeological sites.

8.3.1.3 Ethnographic Background

The project site is situated within the historical Taymen (Tamien) territory of the Ohlone (Costanoan) Indians (Levy 1978; Kroeber 1925). The term "Costanoan" is derived from "Costaños", the Spanish word for "coast people". The term refers to a language family found throughout a large area that included the eastern perimeter of the San Francisco Bay and San Francisco Peninsula, or from the Carquinez Straits down to the southern margin of the Bay, and up to the Golden Gate. The Costanoan language family included eight distinct languages, Taymen among them. These eight languages have been described as "as different from one another as Spanish is from French" (Levy 1978). All eight Costanoan languages also belong to the Penutian language stock. Penutian languages were spoken throughout north-central California by a number of aboriginal groups, including the Wintu, Maidu, Miwok, and Yokuts. Linguistic evidence suggests that Costanoan speakers occupied the Bay Area by 1,500 years ago.

In 1971, Bay Area descendants of the Costanoans organized as the Ohlone Nation ("Ohlone" is probably being derived from the Miwok word meaning "people of the west"). Therefore, it is correct to speak of the Costanoans when reviewing the ethnographic background of these people and to speak of the Ohlone when referring to their current status as a nation. The Ohlone Nation received title to the cemetery where their ancestors who died at Mission San Jose are buried. However, no official governmental recognition has been given to the Costanoans as a tribe.

Figure 8.3-1 shows the approximate location of aboriginal territories in the project area at a scale of 1:24,000. The Taymen or Santa Clara Costanoan occupied the south shore of San Francisco Bay into the lower Santa Clara Valley, including along the Guadalupe River. In 1770, Tamyen speakers numbered approximately 1,200. The Ohlone village site, *Ulis-tak*, has been identified as residing along the west bank of Guadalupe River, and there is some speculation that site CA-SCL-6 is within this area (Kroeber 1925; King 1973; Basin Research Associates, Inc. 1999).

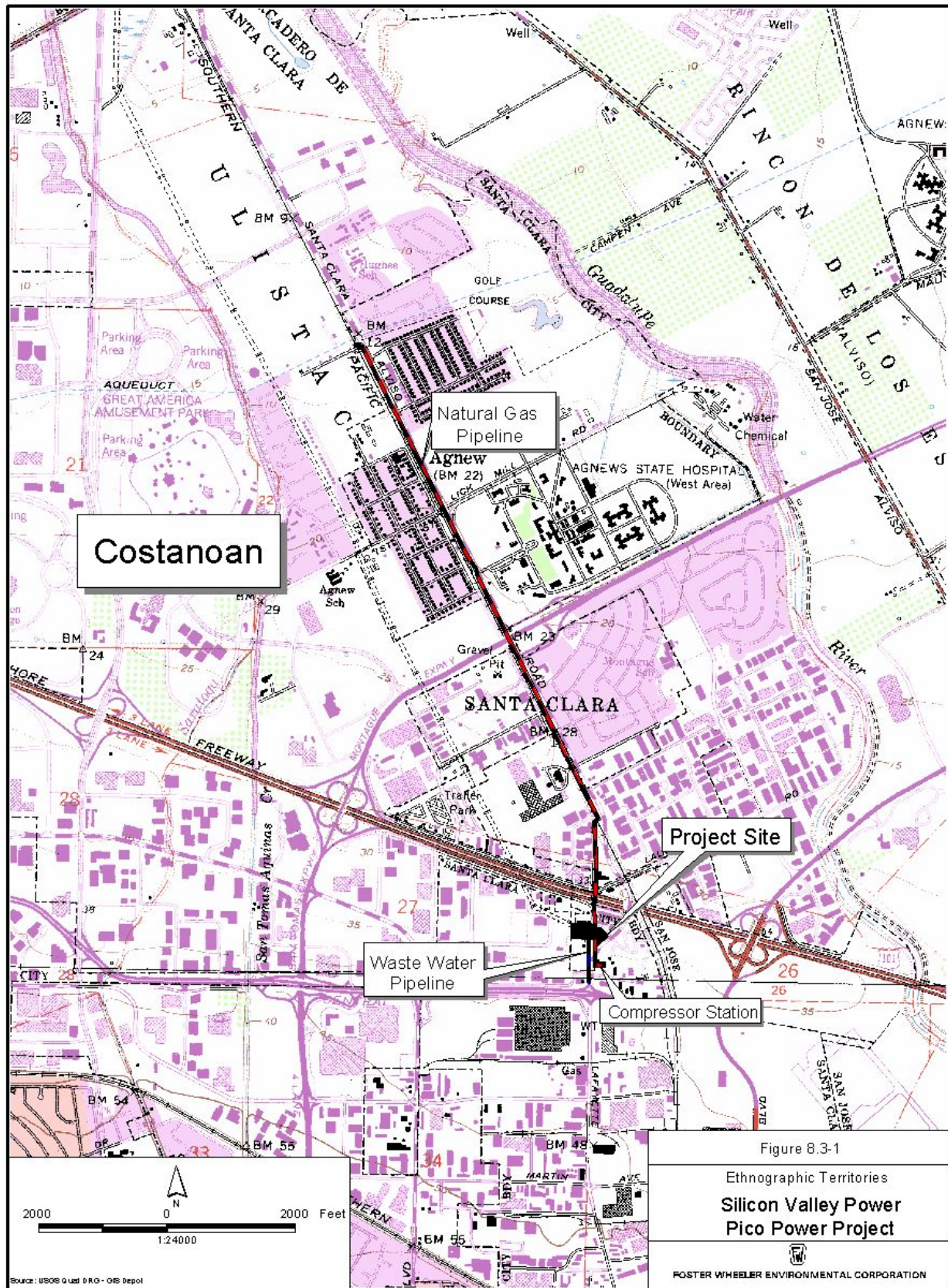
In addition to and overlapping the larger ethnic groups based on linguistic distinction, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous tribelets, that comprised the basic unit of Costanoan political organization. Each tribelet had one or more permanent villages and any number of smaller camps. The village served as a political, social, and ceremonial center in which the tribelet congregated during the winter and from which members of the tribelet launched foraging parties to temporary camps in the warmer months. Surplus food was stored in the larger villages. The name of the tribelet was often the name of its principal village. The average number of persons in a tribelet was approximately 200 (Levy 1978). The position of tribal chief was inherited patrilineally,

usually from father to son, although a woman could also hold the position. The chief had extensive responsibilities, including acting as the leader of a council of elders who were responsible for advising the community.

Ethnographic data pertaining to the Ohlone is incomplete at best. The first Euroamericans to record contact with the Ohlone were Fathers Fages and Crespi, who in 1772 traveled up the east side of San Francisco Bay to the Carquinez Straits and then turned south through the Walnut Creek, San Ramon, and Livermore valleys. Fages and Crespi noted “numerous villages of very gentle and peaceful heathen, many of them of fair complexion” (Cook 1957).

During the next decade, the establishment of Mexican missions at San Francisco, Santa Clara, and San Jose had profound and irrevocable effects upon the Indian population. The missions also resulted in a comingling of peoples of different linguistic and cultural backgrounds and a blurring of cultural identities. In addition to the Ohlone, Northern Valley Yokuts, Plains Miwok, Lake Miwok, Coast Miwok, and Patwin were all brought to Mission San Jose (Levy 1978). By 1834, when the missions were secularized, the effects of disease, military reprisals, and the recruitment of Native Americans as Christian converts had all but obliterated Ohlone culture. The subsequent arrival of Anglo populations further hastened the cultural extinction.

Ethnographic information available for the Ohlone comes primarily from accounts of early explorers, from mission records, and from a few ethnographers who, in the early and middle years of the twentieth century, were able to work with the few remaining native informants (e.g., Kroeber 1925; Harrington 1942; Merriam 1967). These lines of evidence indicate that the Costanoans were hunter gatherers and that fish and shellfish were an important part of the coastal Ohlone diet. Clams, mussels, steelhead, sturgeon, salmon, and lampreys were all eaten. The Ohlone probably fished with harpoons, nets, and twined basketry traps. Fish poisoning with soaproot was reportedly a common practice. The Ohlone also reportedly used a variety of techniques to hunt large and small mammals, including deer, elk, antelope, bears, mountain lions, sea lions, whales, dogs, wildcats, rabbits, gophers, squirrels, mice, moles, woodrats, raccoons, and skunks. Sinew-backed bows and arrows with a cane shaft and blunt bone or stone tip were used for larger animals, and deadfall snares were used for large and smaller game. Sea animals may have been clubbed from tule balsas or from the banks of tidal sloughs. Communal rabbit drives were sometimes held. Migratory waterfowl and birds also had a prominent place in the Ohlone diet, and waterfowl were particularly important. Canada geese, snow geese, ducks, and coots (mudhen) were hunted using decoys made from a bird carcass stuffed with grass. Hawks, doves, and quail were also hunted and eaten.



The acorn was undoubtedly the most important of the plant foods gathered. Acorns were ground to a meal using stone mortars and pestles, then leached through an open-weave basket to remove the tannins. The leached acorn mush was consumed immediately or formed into cakes, which were dried and stored. Acorns came predominantly from the valley oaks, coast live oaks, and interior live oaks. Black oak acorns, less common in the project area, were preferred and may have been obtained in trade with people in the hills to the east where the black oak is more common. Alternatively, the Oroyson may have had reciprocal food-gathering privileges with neighboring tribelets that allowed them to get their own black oak acorns. Buckeyes were processed in a similar manner to acorns but were considered an inferior food. The Ohlone also gathered and made use of laurel nuts, hazelnuts, and an assortment of wild roots, bulbs, fruits, nuts, and seeds.

Plant and animal resources were also used for medicinal, ornamental, and other functional uses (e.g., baskets, shelters, and tools). Resources that were available on a seasonal basis may have influenced prehistoric occupation patterns. For example, acorns are available in October and November, hard seeds can be harvested from May to September, and certain shellfish in California are not edible from May through October. During various seasons, foraging parties left the tribelet villages to engage in fishing, hunting, and the collection of plants within the tribelet's territory and to engage in trade outside this territory.

The main trading partners with the Costanoans were the Plains Miwok, Sierra Miwok, and Yokuts. The Costanoans supplied the Yokuts with mussels, abalone shell, and dried abalone; they supplied the Sierra Miwok with olivella shell; they supplied the Plains Miwok with bows; and they supplied all of these groups with salt (Davis 1961, in Levy 1978). (The Plains Miwok word for salt is actually borrowed from a Costanoan language.) In exchange, the Costanoans received pinyon nuts from the Yokuts and may have received clamshell disk beads from the Miwok. The Costanoans also fought wars, most often over disputed territories, with other Costanoan tribelets and with the Esselen, Salinan, and Northern Valley Yokuts (Levy 1978).

The Costanoans lived in thatched domed structures with rectangular doorways and a center hearth. The Costanoans also constructed domed assembly houses and circular or oval fenced dance enclosures, both of which were located in the center of the village, surrounded by dwellings. Sweathouses, used by adult men and women, were built into pits excavated out of the banks of streams near the village. The Costanoans generally buried their dead within the village. Bodies were flexed in a variety of positions, including seated, and faced in various directions.

As noted above, the hunting and gathering lifeway of the Ohlone was interrupted by the arrival of Euroamericans, who brought disease (including a 1833 malarial epidemic and a 1837 smallpox epidemic, which killed a large percentage of Costanoans), dislocation (as most surviving Costanoans were brought to the Spanish missions), and cultural atrophy (as the Costanoans were Christianized and traditional lifeways no longer practiced at the missions). Mexicans and Americans took over much of the Costanoan lands during the 1830s and 1840s, securing land grants and claims to natural resources within these territories. Following secularization of the missions in 1834, many Costanoans served as ranch hands to the Mexicans and Americans who had taken their land.

8.3.1.4 Historic Background

Recorded history in the project area begins with early Spanish exploration in the area, the arrival of missionaries, and the establishment of Mission Santa Clara near the project site. This was followed by secularization of the missions and division of lands in the project vicinity into a number of large ranchos, the development of an agricultural land use pattern, and the expansion of shipping during the Hispanic Period continuing into the American Period. The agricultural land use pattern was eventually replaced with the arrival of rail transport and subsequent rapid urban expansion. Urban expansion included the formation and incorporation of cities, such as Milpitas, Sunnyvale, Cupertino, Santa Clara, and San Jose, as well as the growth of large-scale agricultural production.

Documented historic-era resources in the project area are associated chiefly with the various industries that developed here from the mid-1800s to the mid-1900s. The industrial history of the project area can be divided into several historic themes: agriculture and ranching, and railroads and other transportation-related industries.

Hispanic Period

The earliest historic records for the project area are the accounts of Spaniards who explored the Bay area, beginning in the late 1700s. The eighth mission of California, “La Mission Santa Clara de Asis”, was erected along the bank of Rio Guadalupe (Guadalupe River) and founded by Father Junipero Serra on January 12, 1777. Due to the flooding along the river and earthquake damage, the mission was rebuilt and relocated five times from 1779 to 1822. One of the first locations of Mission Santa Clara Asis was approximately one mile east of the proposed PPP plant site. The final location of the mission is south of the project area at what is now the University of Santa Clara’s college chapel. The Costanoan Indians who had preceded the Spanish explorers and missionaries in the project area were forced into the missions, along with Native Americans from the interior of California.

Following the independence of Mexico from Spain and the secularization of the Spanish missions in 1834, most of the land in the project area was parceled out by Mexican governors as large land grants, or “ranchos”, primarily, but not exclusively, to “Californios” (second generation, native-born descendants of early soldiers and civil servants under Spanish and then Mexican rule). The project area is within the historic “Rancho Ulistac”, which extended from the south shore of the San Francisco bay to the vicinity of today’s Highway 101 situated between the Guadalupe River and Saratoga Creek. Mexican Governor Pio Pico granted the 2,217-acre rancho to three Native Americans named Marcelo, Cristoval, and Pio, in May of 1845 (Hoover et al. 1966). The three Native American ranchers settled and cultivated the land along the Guadalupe River, approximately two miles northeast of the proposed plant site. The Rancho Ulistac was eventually subdivided and sold (some land acquired by squatters) in the mid-late nineteenth century to accommodate the influx of diverse settlers during and after the gold rush.

In addition to ranching, Californios continued the trade in hides and tallow in the project area. During this time, most of the Mission Indians were either hired on as ranch hands or were relocated to one of the reservations located far to the east or north.

American Period

The Californios were followed by a new wave of immigrants who came to California and the project area in the mid-1800s, following reports of gold discoveries. The project area was not a particularly active mining area (although there was some mining in the hills to the east), but it was active in supplying the miners in the Sierra Nevada Mountains further east with food, hardware, and clothing. In addition, the

Santa Clara Valley provided a good market for agricultural commodities, such as vegetables and grains, and the project area saw a growth in agriculture and ranching beginning in the mid to late-1800s. The subdivided land from Rancho Ulistac became farms and ranches.

James Lick, a wealthy carpenter and piano maker by trade, purchased large amounts of land in San Francisco and in Santa Clara Valley, including a track of land east of the Alviso-Santa Clara Road (modern Lafayette Street) and along the Guadalupe River. In 1855, Lick had completed the construction of a flourmill, known as “the Mahogany Mill” and “Licks Folly”, on the west bank of the river. He grew orchards and cultivated grain. He utilized his talents in horticulture, transforming his orchards into some of the finest in the state and sold produce to the residents of San Francisco (Thompson and West 1876; Misch and Stone 1998). Lick donated the mill and property to the Thomas Paine Society in Boston, Massachusetts in the early 1870s.

Riverside Farm, the parcel south of Lick’s property, bounded by the Alviso-Santa Clara Road on the west, Montague Road (modern Montague Express way) on the north, and the Guadalupe River to the east, belonged to Wilford Weed Montague. He also owned an adjacent parcel, west of the South Pacific Railroad Tracks. Lick was the former postmaster of San Francisco and a manufacturer of hydraulic mining equipment and other metal implements (Thompson and West 1876; Basin Research Associates, Inc. 1999).

Abram Agnew, an early settler from Ohio, acquired 120 acres of land in 1873, west of Lick’s property and the Alviso-Santa Clara Road, and bounded by Campbell Creek (Saratoga Creek) on the west. Agnew utilized his land for farming and ranching. He raised dairy cows and other livestock and began cultivating a diversified crop. By 1888, his crops yielded produce such as strawberries, grain and hays, alfalfa, and various other fruits. The eastern portion of Agnew’s property was subdivided and mapped out in a grid containing seven streets and six blocks, and became known as “Agnews Village”. The eastern most street (modern Basset Street) paralleled the South Pacific Coast train tracks (Basin Research Associates, Inc. 1998).

The narrow-gauge South Pacific Coast Railroad (SPCRR) was built by Alfred Davis and Comstock Lode millionaire James Fair in 1876. The line ran from Alameda to Santa Cruz and transported passengers and freight such as fruit, vegetables, and lumber. Within the project area, the Alviso-Santa Clara segment of the line ran along the west side of Alviso-Santa Clara Road (Lafayette Road). The SPCRR constructed the Agnew Station midway between the two towns on the eastern portion of Abram Agnew’s property.

The Agnews Insane Asylum (Agnews State Hospital west area, more recently Sun Microsystems, Inc.), an institution for the mentally ill, was constructed in 1885 on a 275-acre parcel that included James Lick’s former property, east of the SPCRR tracks. The South Pacific Coast Railroad was purchased by the Southern Pacific Railroad in 1887 (Basin Research Associates, Inc. 1998; Society of the Preservation of Carter Railroad Resources 1999; Douglas 2000).

Agriculture became the main industry in the area in the late nineteenth and early twentieth century. Santa Clara’s population continued to grow steadily and increased dramatically in the 1950s by 403 percent, due to industrial and commercial growth. The once vast farming and ranching communities gave way to residential housing, business buildings, and a network of modern roads. In the later half of the twentieth century, electronics companies began to settle in Santa Clara, contributing to an increase in population and the name “Silicon Valley” (City of Santa Clara 2002).

Electrical Distribution System

Electrical power plants began to be constructed in the late 1880s. Long distance transmission was pioneered in California in 1891, with a 14-mile-long line constructed for a hydroelectric facility in San Bernardino County. In the 1890s, a PG&E predecessor constructed a 22-mile-long electrical transmission line between the Folsom hydroelectric plant and downtown Sacramento. This was one of the earliest long-distance transmission lines. By the 1920s, electrical power companies had constructed a number of long-distance lines to transmit hydroelectric power from the Sierra Nevada mountains to major population centers in the central Valley and on the California coast. Most early transmission lines were steel truss structures based on the design of steel windmills for the oil industry. The electrical service industry coalesced around private, regulated monopolies like PG&E, as well as municipal utility districts such as SVP.

Prior to the 1960s and before the Kifer Receiving Station was built, an electrical transmission line crossed extended through the current location of the Kifer station and continued southeast across Lafayette to the corner of Lafayette and Comstock, and then east to Kifer Road (USGS 1953). SVP built a small substation in the early 1960s at the corner of Lafayette Street and Comstock Street, abandoning the transmission line segment east of the substation (USGS 1961). This small substation is abandoned and is the site of the PPP gas compressor station.

Historic Archaeological and Historic Site Sensitivity

Sensitivity for historic resources and historic archaeological resources in the project area is low. Early historic uses near the project area included railroad transportation, ranching and farming, and electrical distribution. None of these are particularly near any proposed project facilities. Historic archaeological deposits are less likely to be present near project features, including the natural gas line pipeline, the compressor station, and wastewater return pipelines.

8.3.1.5 Resources Inventory Methods

Inventory methods for the PPP project consisted of archival research, an intensive pedestrian survey, architectural reconnaissance, and Native American consultation.

Archival Research Methods

Foster Wheeler Environmental conducted a records search at the Northwest Center of the California Historical Resources Information System (CHRIS) at Sonoma State University in Rohnert Park, Sonoma County on May 22, 2002 (File No: 01-1616). A one-mile radius from the proposed plant site and 0.25 miles of either side of the proposed linear features were searched.

Archival research revealed several previous investigations within portions of the APE. Table 8.3-1 is a list of these previous surveys within 1.0 mile of the proposed power plant site APE and 0.25 miles of the natural gas pipeline route APE. Table 8.3-2 lists previously recorded prehistoric and historic archaeological sites within 1.0 mile of the plant site and within 0.25 miles of the natural gas linear route and compressor station.

Table 8.3-1. Previous archaeological surveys conducted within and near the project site APE and natural gas pipeline APE.

Author	Title	Sponsor	Area Surveyed	Survey Type	Visibility	Results
Anastasio, R. et al. May 1987	Historic Property Survey of the Proposed Central Expressway Commuter Lane Project Located in the Cities of Santa Clara, Sunnyvale, and Mountain View, SCC	Donaldson Associates	8.3 miles linear	N/A	N/A	15 historic properties
Anastasio, R. et al. May 1987, revised April 1988	Historic Property Survey of the Proposed Central Expressway Commuter Lane Project Located in the Cities of Santa Clara, Sunnyvale, and Mountain View, SCC	Donaldson Associates	8.3 miles linear	N/A	Poor-fair	15 historic properties
Anastasio, R. et al. May 1987, revised November 1997	Historic Property Survey of the Proposed Central Expressway Commuter Lane Project Located in the Cities of Santa Clara, Sunnyvale, and Mountain View, SCC	Donaldson Associates	8.3 miles linear	N/A	N/A	15 historic properties
Archaeological Resource Service 1978	No name, NWIC # 4486	Tri-State Engineering	Over ~ 100 acres	General Reconnaissance	Good to moderate	3 historic structures
Baker, S. 1998	Archaeological Survey, San Tomas Aquino/Saratoga Creek Trail Project, Santa Clara County	Tomas Reid Associates	12 linear miles	General Reconnaissance	N/A	2 Historic Features
Ballard, H. et al.	Archaeological Survey and Record Search Results for the Fourteen Broadwing Bay Area Fiber Optic Segments, California, Final Report	North State Resources	~5.3miles	General Reconnaissance and windshield	Fair to poor	Negative
Ballard, H. et al.	Archaeological Survey and Record Search Results for the MCI WorldCom: Fremont, San Jose 12, San Mateo, Santa Clara Fiber Optic Segments	North State Resources	6.3 miles	General Reconnaissance and windshield	Fair to poor	Negative, historic structures noted
Basin Research Associates, Inc.	Revised Historic Property Survey Report, Route 87 Freeway Project, City of San Jose, SCC	David J. Powers & Associates	Linear route	General Reconnaissance	N/A	Negative – previous sites in area
Basin Research Associates, Inc.	Addendum No. 1 Cultural Resources Assessment PG&E Proposed Northeast San Jose Transmission Reinforcement Project	Aspen Environmental Group	N/A	General Reconnaissance	N/A	Negative
Basin Research Associates 1984	Cultural Resource Update Supplement for the Revision of the Rincon De Los Esteros Redevelopment Project	David Powers & Associates	N/A	Archival Investigation	N/A	Prehistoric & Historically Sensitive

Table 8.3-1. (continued.)

Author	Title	Sponsor	Area Surveyed	Survey Type	Visibility	Results
Basin Research Associates 1988	Historic Properties Survey Report for Proposed Widening and Improvements to Hwy 101 between Hwys 280/680 and Trimble Road/De la Cruz Ave (revised)	EIP Associates	N/A	General Reconnaissance	0-30%	14 historic structures
Basin Research Associates 1988	Historic Properties Survey Report for Proposed Widening and Improvements to Hwy 101 between Hwys 280/680 and Trimble Road/De la Cruz Ave	EIP Associates	Over 3 linear miles	General Reconnaissance Architectural	0-5-10 %	Negative
Basin Research Associates 1988	Historic Properties Survey Report for Proposed Widening and Improvements to Hwy 101 between Hwys 280/680 and Trimble Road/De la Cruz Ave (Second revision)	EIP Associates	Over 3 linear miles	General Reconnaissance Architectural	0-30%	14 historic structures
Basin Research Associates 1992	Completion of Archaeological Monitoring Runway Expansion, San Jose International Airport	City of San Jose	~5 acres	Monitoring Report	Good	1 historic
Basin Research Associates 1996	Archaeological Resource Review, Agnews west Campus City of Santa Clara, SCC	David Powers & Associates	200 acres	Non-systematic	N/A	1Prehistoric & 5 Historic PR
Basin Research Associates 1996	Historic Properties Treatment Plan South Bay Water Recycling Program	Parsons Engineering Science	N/A	Treatment Plan	N/A	2 prehistoric sites
Basin Research Associates 1996	Historic Properties affected or potentially affected by the South Bay Water Recycling Program (Supplemental Report)	Parsons Engineering Science	60 linear miles	General Reconnaissance	N/A	4 prehistoric and 2 historic previously recorded
Basin Research Associates 1997	Cultural Resource Assessment Rincon de Los Esteros Redevelopment Area	David Powers & Associates	N/A	General Reconnaissance and windshield	N/A	15 prehistoric, 76 historic
Basin Research Associates, Inc. 1998	Archaeological Resources Review CA-SCL-6	City of Santa Clara	N/A	Site Review	N/A	1 prehistoric occupation and burial site
Basin Research Associates, Inc. 1998	Historic Architectural Surveys, Colman Area, Julian-Stockton Redevelopment Area, and Agnews Area	David Power & Associates and SJIA	Not noted	Architectural	N/A	90 historic properties
Basin Research Associates 1999	Capital Auto Mall Plaza, Northwest Corner of Capitol Expressway and Hwy 87 City of San Jose	McDonalds Corporation	6.2 acres	Monitoring Report	Good	Negative

Table 8.3-1. (continued.)

Author	Title	Sponsor	Area Surveyed	Survey Type	Visibility	Results
Basin Research Associates 1999	EHC Residential Facility at 1501 Agnew Rd. City of Santa Clara	Mid-Peninsula Housing Coalition	2.02 acres	Monitoring report	Good	Negative
Basin Research Associates, Inc. 1999	Montague Expressway Improvements Project Cities of Santa Clara, San Jose, and Milpitas, SCC	David Power & Associates	~2 miles	N/A	N/A	1 prehistoric, 1 historic previously recorded sites
Basin Research Associates 2000	North San Jose Storm Drain Master Plan Phase II Montague Unit Improvements	David Powers & Associates	N/A	General Reconnaissance	N/A	1 prehistoric, 1 historic PR
Basin Research Associates, Inc and Corbett & Minor 1998	Preliminary Historic Architectural Survey, Portions of phases 1-4, 5-6 Areas San Jose International Airport (SJIA) Acoustical Treatment Program, City of Santa Clara, SCC	David J. Powers and Associates and SJIA	~1 mile radius	Windshield architectural	N/A	90 historic properties
Basin Research Associates and Hill W. 1999	Historic Property Survey Report, Montague Expressway Project Cities of Santa Clara, San Jose, Milpitas, SCC	David Powers & Associates	N/A	Architectural	N/A	Negative
BioSystems Analysis, Inc. 1989	Technical Report of Cultural Resources Studies for the Proposed WTG-West, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project	Applied Conservation Technology (ACT), Inc. Westminster, CA	550 miles linear route	General Reconnaissance	N/A	49 archaeological sites, 13 Isolates
Busby, C. 1996	Historic Property Survey Report (NWIC #S-2113	Department of Transportation	8 acres	General Reconnaissance	N/A	8 prehistoric, 3 historic PR
Busby, C. et al. 1998	Cultural Resources Assessment-Subareas A-H Bayshore North Redevelopment Area, City of Santa Clara, SCC	David Powers & Associates	~50+	General Reconnaissance	N/A	Negative
Busby, C. et al. 1999	Estancia Apartments Project on Hope Drive (Agnews West Campus), City of Santa Clara, SCC Archaeological Monitoring Closure Report	Hope Drive Associates, LLC	~40 acres	Monitoring Program	N/A	Negative
Busby, C et al. 2000	Sun Microsystem Santa Clara Campus Project, Agnews West Campus, Archaeological Closure Report, Phase I	Jones Lang LaSalle	N/A	Monitoring Program	N/A	Negative
Busby, C. et al. 2001	Archaeological Monitoring Services Closure Report Waste Water Sewer along Part of De La Cruz Boulevard, City of Santa Clara, SSC	City of Santa Clara	~1050 feet	Monitoring Program	N/A	Negative

Table 8.3-1. (continued.)

Author	Title	Sponsor	Area Surveyed	Survey Type	Visibility	Results
Cartier, R. et al. 1980	Archaeological Evaluation of the San Jose Municipal Airport	City of San Jose	~1000 acres	General Reconnaissance and testing	N/A	3 Historic deposit
Cartier, R. et al 1985	Cultural Resource Evaluation of the Esperanca Development on Fuller Street in the County of Santa Clara	Earth Metrics	48.3 acres	General Reconnaissance	N/A	Negative
Cartier, R. et al. 1988	Cultural Resource Evaluation of a Parcel at Central Expressway and Scott Blvd. In the City of Santa Clara.	Spieker Partners #6080-88-400	18 acres	General reconnaissance	Excellent	Negative
Cartier, R. et al. 1993	Cultural Resource Evaluation of the De La Cruz Boulevard Project in the City of Santa Clara, SCC	City of Santa Clara	~1.5 miles	General	20%	Negative
Cartier, R. et al. 1995	Cultural Resource Setting of the San Jose International Airport	Environmental Science Associates	483 acres	Archival Investigation	N/A	Prehistoric & Historically Sensitive
Cartier, R. et al. 1996	Cultural Resource Evaluation of the Santa Clara Pipe Alignment for the South Bay Water Recycling Program	Parsons Engineering Science	Over 2 linear miles	General Reconnaissance	Poor to excellent	5 previously recorded sites
Cartier, R. et al. 2000	Cultural Resource Evaluation of lands for the Best Western Gateway Inn Addition Project	Mr. Ronald Perner, AIA	2.67 acres	General Reconnaissance	N/A	2 isolates
Flynn, Katherine 1989	Archaeological Survey Report on the San Tomas/ Montague Expressway Improvement Project, SCC	Santa Clara County Transportation Agency	~.25 mile	General reconnaissance window	N/A	Negative
Garaventa, D. et al. 1992	Cultural Resources Assessment for the San Jose International Airport Runway 12R/30L Expansion Project EIR City of San Jose, SCC	City of San Jose Airport Department	1300 feet	General Reconnaissance	N/A	Negative
Hatoff, B. et al. 1995	Cultural resources Inventory Report for the Proposed Mojave Northward Expansion Project	Mojave Pipeline Company	591.7 linear miles, 227.31 acres	General Reconnaissance	N/A	9 prehistoric, 81 historic, 2 multi-component, 15 isolates, 83 RR crossings
Hill, Ward 1999	Historic Architectural Survey Report-Montague Expressway Improvement Project Cities of Santa Clara, San Jose, and Milpitas. Santa Clara County	David J. Powers and Associates	~6.6 miles linear	Architectural general	N/A	Negative

Table 8.3-1. (continued.)

Author	Title	Sponsor	Area Surveyed	Survey Type	Visibility	Results
Holman, M. 2000	Archaeological Backhoe Trenching of the Exodus Property, Santa Clara, Santa Clara County	Randy Lamb	Linear trench	Monitoring Program	Excellent	Negative
Holman, M. et al. 1997	Archaeological Field Inspection of the City of Santa Clara Northern Receiving Station, Santa Clara, SCC	David Powers & Associates	12.9 acres	General Reconnaissance	Poor-fair	Negative
Hylkema, M. et al.	Subsurface Presence/Absence Testing at the Woolen Mills Chinatown Site CA-SCL-807H and Three Storm Water Detention Basins for the Route 87 Guadalupe Corridor Freeway Project	California Department of Transportation	3.25 miles	General Reconnaissance and Testing	N/A	1 historic
McKale, G. et al. 2000	Archaeological Study for Esperanca Property, City of Santa Clara, Santa Clara County	Citation Homes	10 acres	General Reconnaissance	Fair	Negative
Nelson, W. et al. 2000	Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project Segment WS05: San Jose to San Luis Obispo	Parsons Brinckerhoff Network Services	Linear route	General Reconnaissance	N/A	Prehistoric and historic sites.
Pacific Legacy 1997	Cultural Resources Survey for the Los Esteros Project, Santa Clara County	PG&E	~8 linear miles, 30 acres	General Reconnaissance	Poor	Negative
David Powers & Associates 1978	Environmental Impact Report Hotel and Office Complex	City of Santa Clara	N/A	N/A	N/A	Negative
White, G. et al. 1999	Phase 1.5 Prehistoric Archaeology Results, Route 87 Guadalupe Corridor Freeway Project. San Jose, SCC.	California Department of Transportation	3.25 miles linear	Geoarchaeological (test trenching)	Excellent	2 prehistoric deposits
Woodward-Clyde 1985	Cultural Resources Study of the Proposed Peakload Power Plant Site, Santa Clara	City of Santa Clara	40 acres	General Reconnaissance	Excellent to moderate	2 prehistoric isolates
Woodward-Clyde 1998	Lower Guadalupe River Flood Control Project, Cultural Resources Archival Research and Archaeological Reconnaissance	Santa Clara Valley Water District	6.5 linear miles	General Reconnaissance	N/A	11 prehistoric, 8 historic PR

Table 8.3-2. Previously recorded archaeological sites within one mile of the project site.

Primary Trinomial	Report Citation	7.5' Quad	Distance	Site Type	Effect	Action
CA-SCL-702	1980 Waste Management Site Project. Data Recovery.	Milpitas	.20 miles SE of project site and 400' east of the construction laydown	Prehistoric cemetery with 10 human burials and associated artifacts.	No effect	None
CA SCL-311H	1978 (no report cited)	Milpitas	.50 miles NE of project site	Historic "Trimble Road" c. 1770's (access to first Mission Santa Clara site).	No effect	None
P-43-000649 / CA-SCL-762	1993 Mojave North Mainline Cultural Resources Survey	Milpitas	.65 miles NE of project site	Prehistoric shell midden.	No effect	None
P-43-001163 / CA-SCL-828	1999 (no report cited)	Milpitas	.83 miles W of project site	Prehistoric shell midden.	No effect	None
CA-SCL-430	1980	San Jose West	.95 miles SE of project site	Prehistoric: lithics, some ground stone.	No effect	None
P-43-000900	1994	San Jose West	1 mile SW of project site	Historic Peninsula Commute Service (San Francisco and San Jose Railway) post c. 1945.	No effect	None

In addition to reviewing available survey reports, lists of historic properties (e.g., the National Register of Historic Places, California Inventory of Historic Resources, California Points of Historic Interest, California Landmark files, Santa Clara Heritage Resource Inventory, City of Santa Clara's Historical Landmarks Commission web page, and the City of Santa Clara General Plan Historically Significant Resources list) were reviewed to locate historic archaeological sites within the project area. The Applicant studied USGS topographic maps and other historical maps to determine where unrecorded historic structures and features might be located. The Applicant also contacted the City of Santa Clara's Historic Resource Coordinator, Gloria Sciara (see Appendix 8.3-A), requesting information pertaining to historic resources within the vicinity of the project area. Ms. Sciara commented on the prehistoric sensitivity of the area based on known previously recorded sites near the project area. She also recommended additional Ohlone Native American contacts. A letter was sent out to these individuals who may have knowledge regarding traditional cultural properties and sacred places in the project area (see Appendix 8.3-D). Lorie Garcia, a local historian and Planning Commissioner, was contacted by telephone and has not yet responded.

Archaeological Survey Methods

Jenna Farrell conducted a pedestrian field survey for the PPP project. Ms. Farrell has a Bachelors degree in Archaeology and five years of archaeological experience. The project site, compressor station, natural gas pipeline route and gas metering station, waste water discharge pipeline, and construction laydown areas were surveyed by Ms. Farrell on July 9, 2001. Ms. Farrell's resume is attached as Appendix 8.3-B.

Power Plant Site

The proposed PPP plant site is north of and adjacent to the Kifer Receiving Station, and currently used as a Silicon Valley Power transmission pole and tower training facility and parking lot. The City of Santa Clara also uses an area on the property for street sweeper cleaning. Visibility of the ground surface on the day of the survey ranged from zero to 90 percent due to the presence of cars, debris, imported fill, and vegetation. The 2.86-acre area was walked in approximately 10-meter transects and the ground surface was examined for any cultural material.

Natural Gas Pipeline and Metering Station

The natural gas pipeline route begins with its connection to PG&E Line 132, located at the corner of Gianera Street and Wilcox Avenue. From a metering station adjacent to this corner and within a bicycle/pedestrian pathway, the pipeline route goes under the Union Pacific Railroad tracks to connect with Lafayette Street. It then follows Lafayette Street south as far as Aldo Avenue, where it crosses back under the Union Pacific Railroad tracks to join Bassett Street. The pipeline follows Bassett Street south to Laurelwood Road, where it will pass under U.S. Highway 101 to Duane Avenue. It then runs down Duane to Lafayette and south on Lafayette to the gas compressor station at the corner of Comstock Street. A pedestrian survey took place along the east side of Bassett Street to Aldo Avenue, and on the west side of Lafayette Street, adjacent to the railroad tracks north to the connection point at Gianera Street and Wilcox Avenue. Ground surface visibility was fair to good due to railroad grade fill and exposed ground surface.

Natural Gas Compressor Station

The compressor station will be located the corner of Lafayette and Comstock Streets at the City of Santa Clara maintenance yard. The entire 0.26-acre area of the proposed compressor station was surveyed. Visibility was good.

Waste Water Discharge Pipeline

This pipeline is located in the project site within the former Pico Way right-of-way. It runs south to Lafayette Street for about 900 feet to Central Expressway. The ground surface is not visible along this route except on the PPP Project site because of pavement over Lafayette Street. Adjacent areas with ground visible were inspected.

Construction Laydown and Worker Parking Areas

Each of the four construction laydown and worker parking areas are surfaced lots. These areas are described in Section 2.2.19. No historic resources were observed three of the lots. On the City's maintenance yard at the corner of Comstock and Lafayette Streets, one foundation was observed and recorded (site form attached under confidential cover as Appendix 8.3-C). The foundation was situated between two buildings that may have been associated with a fire station that was built in 1953. The fire station was converted to a shop/storage area for the City of Santa Clara's Building Maintenance Department in 1995. In 1999, a demolition permit (#123608) was issued for a storage unit at 2975 Lafayette Street, most likely the cause of the foundation remains.

Architectural Reconnaissance Methods

Historic buildings and structures older than 45 years are potentially significant historic resources in the project area. The historic structure inventory of the project area covered the APE of the project site, compressor station, linear facilities and gas metering station, and construction laydown areas, and included adjoining lots to the linear routes (one lot deep), to determine whether potentially significant historic architecture is located within the APE and, if so, whether the project will significantly affect the structures. This survey was conducted by JRP Historical Consulting Services. Potential historic resources visited and recorded include Lafayette Street (former Alviso-Santa Clara Road), the Union Pacific Railroad, a quonset structure at 800 Laurelwood Road, and four structures at the City of Santa Clara's property at the corner of Lafayette and Comstock Streets (see discussion of construction laydown areas and parking areas, above). JRP also collected the National Register of Historic Places nomination form for Agnew's State Hospital (Appendix 8.3-C).

Native American Consultation Methods

The Native American Heritage Commission (NAHC) was contacted by mail on June 10, 2002, and information regarding traditional cultural properties and sacred places, such as Native American cemeteries, in the project area, was requested. On June 14, 2002, the NAHC responded that there are no known sacred lands in the project vicinity. The NAHC also forwarded a list of Native American groups or individuals that may have knowledge regarding traditional cultural properties and sacred places in the project area. A letter was sent to each of these parties on June 17, 2002 requesting information about such properties (see Appendix 8.3-D). Additional correspondence was sent to Norma Sanchez of the consulting company Ohlone Family Consulting Services. To date, there have been no responses.

8.3.1.6 Resources Inventory Results

Prehistoric Resources

Archival research located four previously recorded prehistoric sites near the project APE. The archival research area included land within 1.0 mile of the project site and 0.25 miles of the linear facilities. No new archaeological sites or isolates were found within the project APE during the pedestrian field survey. The survey area included the entire project site, gas compressor station, construction laydown and parking areas, and areas within 100 feet of the natural gas pipeline and metering station and waste water pipeline routes. The State of California DPR523 site forms of the previously recorded sites are attached under confidential cover as Appendix 8.3-C.

CA-SCL-702—This site consists of a prehistoric cemetery with 10 human burials and associated artifacts. This site is not within the APE, will be avoided, and will not be affected by the project. The site record has been provided to the CEC Staff in a confidential filing.

P-43-000649—This site consists of a prehistoric shell midden deposit (75 x 100 meters), visible in river channel banks. No other artifacts were noted on the site form. This site is approximately 0.65 miles from the project site, is within one mile of the project site, but is not within the APE, and will not be affected by the project.

P-43-001163—This site consists of a small prehistoric shell midden situated on a manufactured river terrace. The site was identified during construction exploratory trenching at a depth of 240 to 270 centimeters below ground surface. Observed cultural material included *Cerithidea* shells, several pieces of fire-affected-rock, and one deer antler. The site is approximately 0.83 miles from the project site but is not within the APE and will not be affected by the project.

CA-SCL-430—This site consists of complex of light surface scatter of projectile points, a few pieces of fire-affected rock, and two pieces of ground stone (within a 300-acre area). This site is approximately 0.95 miles from the project site, but is not within the APE, and will not be affected by the project.

Historic Resources

Archival research located two previously recorded historic sites near the project APE. The archival research area included land within 1.0 mile of the project site and compressor station and 0.25 miles of the linear facilities and gas metering facility. One new archaeological site and one isolate were found within the project APE during pedestrian field survey. The survey area included the entire project site, compressor station, construction laydown and parking areas, and areas within 100 feet of the linear facilities. The State of California DPR523 site forms are attached under confidential cover as Appendix 8.3-C.

CA-SCL-311H—This previously recorded site consists of the original route of the historic “Trimble Road” c. 1770s and was an access road to the first Santa Clara mission site. This road is approximately 0.7 miles northeast of the project site but is not within the APE and will not be affected by the project.

P-43-000900—This previously recorded site consists of the historic Peninsula Commute Service (PCS). The site is described as a modern and efficient commuter system that follows the alignment of the historic San Francisco and San Jose Railroad (c. 1862). In the late 1950s, the Southern Pacific Railroad rehabilitated the SF&SJ line with heavier rails and to more exacting engineering standards to operate it as a commuter line, designed to carry frequent diesel commuter trains between San Jose and San Francisco. The line comprises double tracks, all 132 pound jointed rails, most of which were laid in the 1950s and 1960s (10 miles of the line were replaced in the 1990s). This site is one mile from the project site, but not within the APE, and will not be affected by the project.

Union Pacific Railroad—Originally the South Pacific Coast Railroad which consisted of a narrow gauge railroad line that ran from Alameda to Santa Cruz, c. 1876, the line has been upgraded and continuously maintained, with wholesale replacement of the tracks when Union Pacific purchased the railroad in 1992. This railroad line is within the natural gas pipeline APE, but will be avoided by bored-and-jacked casing techniques and therefore will not be affected by the project.

800 Laurelwood Road—This Quonset hut was constructed in 1956 and is located at the intersection of Laurelwood Road and Bassett Street and is currently used as a tire shop named Roman Tires Inc. This building is not within the APE and will not be affected by the project.

Lafayette Street—This resource consists of the historic Alviso-Santa Clara Road that ran from Alviso to Santa Clara, c. 1850s. The road was later named Lafayette Street and is a four-lane paved road, with concrete curbs and sidewalks. Portions of the road were realigned when the Bayshore Freeway (Highway 101) was constructed. This road is within the APE of the natural gas pipeline, and a segment is within the APE of the project site. The road does not appear eligible for the National Register of Historic Places or the California Register of Historical Resources.

City Property—A parcel owned by the City of Santa Clara includes four buildings. These are a former fire station building, now serving as City Maintenance Department offices; a paint booth, a small storage building, and a longer building formerly used as a police pistol firing range. There is a fenced area in the southwest corner of the site that contains a transmission tower and the foundation remains of a small former substation (equipment has been removed). This substation was constructed in the 1960s. Site P1-2975 (below) is also located on this property.

P1-2975—This newly recorded site consists of a foundation and associated window glass. This foundation is the remains of a small storage building that was probably constructed in the 1950s. No historic artifacts were observed at the site. The DPR-523 site record form for this site is included in Appendix 8.3-C.

Agnews Insane Asylum—This previously recorded resource is a complex of buildings built in 1885 and was an institution for the mentally ill. This complex is listed on the National Register of Historic Places. It is not within the APE and will not be affected by the project. The National Register nomination form is included in Appendix 8.3-C.

PI-01—This isolated find consists of one amethyst glass fragment c. 1917. Historically, glass was decolorized by the addition of manganese, which causes glass to turn purple to amethyst when exposed to the ultra violet rays of the sun. An isolated find is not considered a significant historic resource. The isolate record form is included in Appendix 8.3-C.

8.3.2 Environmental Consequences

8.3.2.1 Significance Criteria

Under the California Environmental Quality Act (CEQA), an action may be considered to have a significant impact on cultural resources if it will cause a substantial adverse change to an historical resource or a “unique archaeological resource.” Historical resources are those that are eligible for listing on the California Register of Historical Resources (California Public Resources Code [PRC] §5024.1; Title 14, §4852 et seq., California Code of Regulations [CCR]). A property considered for listing can be an object, building, structure, site, area, place, record, or manuscript. A property is historically significant if it “is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, economic, or cultural annals of California.” (PRC §5020.1[j].) Such a property meets the California Register criteria if it:

- a) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;*
- b) Is associated with the lives of persons important in our past;*

- c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or*
- d) has yielded, or may be likely to yield, information important in prehistory or history (PRC 5024.1).*

Archaeological resources may qualify for significance under CEQA if they are determined to be unique archaeological resources as defined in PRC §21083.2. A unique archaeological resource is:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.*
- 2) Has a special or particular quality such as being the oldest of its type or the best available example of its type.*
- 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC §21083.2).*

It may appear that the California Register of Historical Resources was designed for properties of the historic era while the criteria for consideration as a “unique archaeological resource” were designed to apply to prehistoric archaeological resources. Most significant archaeological resources (prehistoric or historic), however, would qualify for the California Register (particularly criteria A and D). Similarly, most significant historic archaeological sites (but not historic buildings and structures, or sites lacking archaeological deposits) would qualify as “unique archaeological resources.”

A significant impact on a historical resource would be one that would cause a “substantial adverse change” to it (CCR, Title 14 §15064.5). That is, an action would be considered a significant adverse impact if it “demolishes or alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources,” or a local register of historical resources.

8.3.2.2 Construction Phase Impacts

Prehistoric Resources

There are no known prehistoric archaeological resources at the project site, gas compressor station, at the construction laydown and parking areas, or along the natural gas pipeline and metering station or waste water pipeline routes. It is possible, however, that the project could encounter buried cultural resources during the construction phase of the project that have not previously been discovered, since the project area has been established as highly sensitive for buried prehistoric and historic remains based on the topography, archival research, historic maps, documentation, and is in an alluvial area of high deposition. Construction monitoring by a qualified archaeologist is recommended for all project-related ground disturbing activities.

Historic Resources

Construction of the natural gas compressor station will involve ground disturbance at the former location of electrical substation equipment in the City’s maintenance yard at the corner of Comstock and Lafayette Streets. According to SVP personnel (Ed Pickett, personal communication), this substation was

constructed during the 1960s and the equipment was removed during the 1970s. It is not of sufficient age to meet the requirements for consideration as a historic resource.

The foundation of a small building that has been demolished is also located in the City maintenance yard that will be used for construction laydown and parking. This building was most likely constructed during the 1950s. It has been recorded (see discussion of Site P-2975 in Section 8.3.1.6, above, and the site form in Appendix 8.3). This site lacks any association with significant persons or events in history. It does not contain artifacts from the historic period that could be analyzed to further our understanding of history. As the foundation of a demolished building, it does not retain any integrity as a structure. For these reasons, the site does not qualify for listing on the California Register of Historical Resources and is not a significant site.

Construction of the natural gas pipeline will avoid the Union Pacific Railroad tracks by jacked-and-bored casing and will avoid Agnews Insane Asylum, Peninsula Commute Railroad, Trimble Road alignment, and Laurelwood Road quonset hut, since the gas pipeline in Lafayette Street will not be located sufficiently near these features for impacts to take place. Pipeline construction will take place within portions of the original alignment of Lafayette Street (former Alviso-Santa Clara Road). This roadway does not maintain historical integrity, however, and is not a significant historical resource. It is not eligible for listing on the California Register of Historical Resources).

8.3.2.3 Operation Phase Impacts

Impacts to cultural resources are not anticipated during operation of the proposed facility. Maintenance of the power plant and associated linear facilities will not cause any effects outside of the initial construction area of impact.

8.3.3 Cumulative Impacts

Since the project will not affect known significant cultural resources, it will not be likely to cause significant cumulative impacts. If the project were to encounter a buried prehistoric midden site, the possibility of cumulative impacts would arise because such sites may be highly significant and those that have been recorded in the project area have been partly damaged or destroyed by agricultural activity and other development.

8.3.4 Proposed Mitigation Measures

Implementation of the following mitigation measures will lower any potential project impact to archaeological resources below the threshold of significance. These measures establish procedures to follow in case previously undiscovered archaeological deposits are encountered below the ground surface.

Preconstruction Assessment and Construction Training

The Designated Cultural Resources Specialist and Archaeological Monitor will visit the project area before construction begins to become familiar with the site conditions. As construction begins, the Designated Cultural Resources Specialist will conduct a worker education session for construction supervisory personnel to explain the importance of and legal basis for the protection of significant archaeological resources. This worker education session can take place at the same time as the paleontological training session (see Section 8.8) because both disciplines will involve the monitoring of excavation activities (although in different areas). Information about archaeological resources may be combined with information about cultural resources in the training brochure that will be distributed to construction supervisory personnel.

Construction Monitoring

The Archaeological Monitor should be present at the construction site when mechanical excavation is taking place. The monitor's role will be to watch for buried archaeological deposits during excavation. If the Archaeological Monitor identifies archaeological resources during construction, he or she should immediately notify the Designated Cultural Resources Specialist and Site Superintendent, who should halt construction in the immediate vicinity of the find, as necessary. The Site Superintendent and Archaeological Monitor will use flagging tape, rope, or some other means as necessary to delineate the area of the find within which construction will halt. This area should include the excavation trench from which the archaeological finds came as well as any piles of dirt or rock spoil from that area. Construction should not take place within the delineated find area until the Designated Cultural Resources Specialist, in consultation with the CEC staff, can inspect and evaluate the find.

Emergency Discovery

If the construction staff or others identify archaeological resources during construction, they will immediately notify the archaeological monitor, Designated Cultural Resources Specialist and site superintendent, who will halt construction in the immediate vicinity of the find, as necessary. The Designated Cultural Resources Specialist will use flagging tape, rope, or some other means as necessary to delineate the area of the find within which construction will halt. This area will include the excavation trench from which the archaeological finds came as well as any piles of dirt or rock spoil from that area. Construction will not take place within the delineated find area until the Designated Cultural Resources Specialist, in consultation with the CEC staff, can inspect and evaluate the find.

If human remains are encountered during construction, project officials are required by law (California Health and Safety Code 7050.5) to contact the county coroner. If the coroner determines that the find is Native American, the coroner is required to contact the NAHC. The NAHC is required (Public Resources Code 5097.98) to determine the Most Likely Descendant, notify that person, and request that they inspect the burial and make recommendations for treatment or disposal.

Site Recording and Evaluation

The Designated Cultural Resources Specialist and archaeological monitor will follow accepted professional standards in recording any find and will submit the standard Department of Parks and Recreation historic site form (Form DPR 523) and locational information to the Northwest Information Center of the California Historic Resources Information System at Sonoma State University, Rohnert Park.

If the Designated Cultural Resources Specialist determines that the find is not significant, construction will proceed. If the Designated Cultural Resources Specialist determines that further information is needed to determine whether the find is significant, the CEC and State Historic Preservation Officer (SHPO) will be notified, and the consultant will prepare a plan and a timetable for evaluating the find, in consultation with the CEC and SHPO.

Mitigation Planning

If the Designated Cultural Resources Specialist and the consulting parties (the CEC and SHPO) determine that the find is significant, they will prepare and carry out a mitigation plan in accordance with state and federal guidelines. This plan will emphasize the avoidance, if possible, of significant archaeological resources. If avoidance is not possible, recovery of a sample of the deposit from which the archaeologist

can define scientific data to address archaeological research questions will be considered an effective mitigation measure for damage to or destruction of the deposit.

The mitigation program, if necessary, will be carried out as soon as possible to avoid construction delays. Construction will resume at the site as soon as the field data collection phase of any data recovery efforts is completed. The Designated Cultural Resources Specialist will verify the completion of field data collection by letter to Silicon Valley Power (the Applicant) and the CEC-Compliance Project Manager (CPM) so that Silicon Valley Power and the CEC-CPM can authorize construction to resume.

Curation

The Designated Cultural Resources Specialist will arrange for curation of archaeological materials collected during the monitoring and mitigation program at a qualified curation facility, that is, a recognized, nonprofit archaeological repository with a permanent curator. The archaeologist shall submit field notes, stratigraphic drawings, and other materials developed as part of the archaeological excavation program to the curation facility along with the archaeological collection.

Report of Findings

If buried archaeological deposits are found during construction, the archaeologist will prepare a report summarizing the monitoring and archaeological investigatory program implemented to evaluate the find or to recover data from an archaeological site as a mitigation measure. This report will describe the site soils and stratigraphy, describe and analyze artifacts and other materials recovered, and explain the site's significance. This report will be submitted to the curation facility with the collection.

Designated Cultural Resources Specialist/Archaeological Monitor Qualifications

The Designated Cultural Resources Specialist should meet the minimum qualifications for Principal Investigator on federal projects under the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. The Archaeological Monitor should hold a Bachelor of Arts degree in anthropology with an emphasis in archaeology and have at least one year of experience conducting archaeological field projects, or have five years of experience conducting archaeological field projects. The Archaeological Monitor is qualified to detect archaeological deposits in the field. The Designated Cultural Resources Specialist is qualified, in addition to site detection, to evaluate the significance of the deposits, consult with regulatory agencies, and plan site evaluation and mitigation activities.

8.3.5 Applicable Laws, Ordinances, Regulations, and Standards

Table 8.3-3 provides a summary of the applicable cultural resources LORS.

The CEC environmental review process under the Warren-Alquist Act is considered functionally equivalent to that of the California Environmental Quality Act (CEQA) (Public Resources Code 15000 *et seq.*) with respect to cultural resources. CEQA and its implementing regulations state that "Public agencies will seek to avoid damaging effects on an archaeological resource whenever feasible."

The California Public Resources Code (PRC) and California Code of Regulations (CCR) provide statutes and guidelines for lead agency compliance with CEQA when evaluating potential effects on historical resources. For example, CCR §21083.2 *Archaeological Resources* addresses the evaluation of potential projects on archaeological resources and defines the term "unique archaeological resource." The PRC, Title 14, §15064.5 *Determining the Significance of Impacts to Archaeological and Historical Resources*,

lists the criteria for the California Register of Historical Resources and defines the meaning of significant impact for historical and archaeological resources.

If a county coroner were to determine that human remains discovered on project lands were Native American, Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code would apply. These laws require that the county coroner notify the NAHC when a Native American grave is found. The NAHC would then identify a most likely descendant to inspect the burial site and make recommendations for treatment or disposal.

8.3.6 Involved Agencies and Agency Contacts

Table 8.3-4 lists the state agencies involved in cultural resources management for the project and lists a contact person at each agency. These agencies include the Native American Heritage Commission, which would be a consulting party in case human remains are found that are prehistoric or historic-era Native American in origin. The California Office of Historic Preservation (OHP) is also listed. This agency is responsible for management of the state and federal historic preservation programs in California. If properties potentially eligible for listing in the California Register of Historical Resources were discovered during construction, the OHP might wish to be a consulting party.

8.3.7 Permits Required and Schedule

The project will require a permit from the California Department of Transportation to bore under Highway 101. Permit conditions will include the protection of cultural resources and human remains. The project will also require a street-opening permit from the City of Santa Clara. Permit conditions will include a requirement for cultural resources monitoring (Gloria Scaria, City of Santa Clara, personal communication). These permits will be obtained before construction begins. The pipeline construction contractor will obtain the permits. The Caltrans permit takes approximately 8 weeks to obtain. The City permit takes 4 to 6 weeks (see also Table 5.6-1).

Table 8.3-3. Applicable cultural resources LORS.

Law, Ordinance, Regulation, or Standard	Applicability	Mitigation Effective?	AFC Reference
California Environmental Quality Act, Section 15064.5	Project construction may encounter archaeological resources	Yes	Section 8.3.4, 8.3.5
California Public Resources Code, Section 21083.2 “Archaeological Resources”	Construction may encounter buried archaeological sites	Yes	Section 8.3.2.1, 8.3.5
California Code of Regulations, Title 14, Section 15064.5 “Determining the Significance of Impacts”	Construction may encounter buried archaeological sites	Yes	Section 8.3.2.1, 8.3.5
California Health and Safety Code, Section 7050.5	Construction may encounter Native American graves, coroner calls NAHC	Yes	Section 8.3.4, 8.3.5
City of Santa Clara Open Space Policy “Archaeology” Programs (xlvi and xlviii)	Construction may encounter buried archaeological sites	Yes	Section 8.3.2.1, 8.3.4, 8.3.5, 8.3.1.5
California Public Resources Code, Section 5097.98	Construction may encounter Native American graves, NAHC assigns Most Likely Descendant	Yes	Section 8.3.4, 8.3.5

Table 8.3-4. Agency contacts.

Issue	Contact	Title	Telephone
Native American traditional cultural properties and human remains	Ms. Debbie Treadway Native American Heritage Commission	Associate Government Program Analyst	(916) 653-4038
City of Santa Clara-General Plan Cultural Resources	Gloria Sciara	Historic Resource Coordinator	(408) 615-2462
California Register of Historical Resources and/or Federal agency NHPA Section 106 compliance (if emergency discovery with federal permit involvement)	Dr. Knox Mellon California Office of Historic Preservation	State Historic Preservation Officer (SHPO)	(916) 653-6624

8.3.8 References

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